National Nuclear Security Administration

W76-1 Life Extension Program

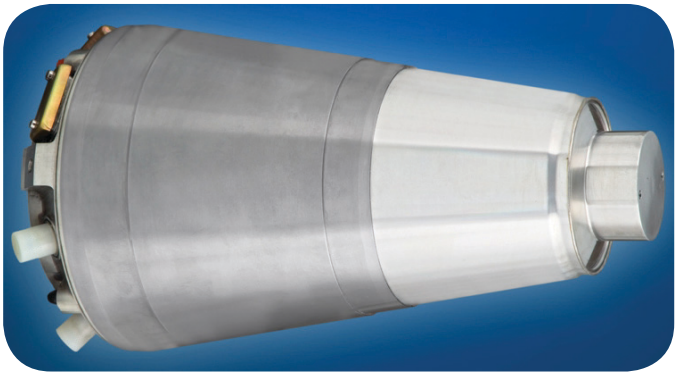
The National Nuclear Security Administration maintains and enhances the safety, security, and effectiveness of the U.S. nuclear weapons stockpile without nuclear explosive testing. The W76-1 Life Extension Program is essential to enabling the NNSA to accomplish its mission to certify the effectiveness of the nation's nuclear deterrent.

Overview

The W76-1 is a refurbished W76-0 warhead. The W76-0 warhead is a submarine-launched ballistic missile system that was first introduced into the stockpile for the Navy in 1978. The W76-1 Life Extension Program is fully consistent with the U.S. commitment to not develop new nuclear warheads. It continues to meet all missions and capabilities of the original W76-0 warhead and does not provide new military capabilities.

The W76-1 Life Extension Program extends the originally designed warhead service life of 20 years to 60 years. Completion of production is scheduled for no later than the end of fiscal year (FY) 2019. NNSA completed the W76-1 first production unit in September 2008, and the first delivery of warheads to the Navy took place in FY 2009. Through effective and efficient program management, the W76-1 Life Extension Program is making all deliveries on schedule and under budget.

The W76-1 warhead will play a critical role in allowing the United States to maintain a credible nuclear deterrent during stockpile reduction over the next several decades.



W76-1 Arming, Fuzing and Firing assembly.

Surveillance

To maintain a safe, secure, and effective nuclear weapons stockpile, NNSA executes a robust surveillance program. W76-1 stockpile surveillance activities are conducted in conjunction with the life extension program activities. Warheads returned from submarines are disassembled to identify potential aging issues that could affect reliability, safety, security, or performance. Any issues identified are thoroughly documented and corrected.

Additionally, some units are built into joint test assemblies, or JTAs. JTAs are warheads that have had the nuclear explosive package removed and replaced with advanced testing and diagnostic equipment. Flight tests of the Navy's submarine-launched ballistic missile are then conducted with a JTA in place, providing more data to the surveillance program. Ultimately, these data are used to provide an annual assessment that the warhead remains reliable, safe, and secure.

W76-1 Life Extension Program

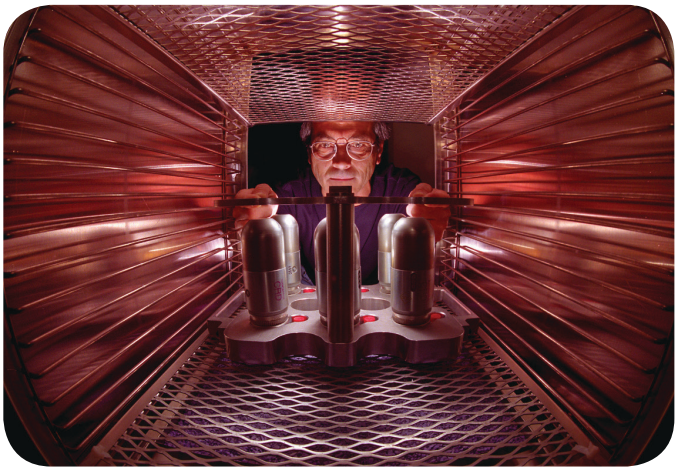
Ohio-class nuclear submarine that might carry a W76-1 warhead.

NNSA Laboratory Roles

NNSA's **Los Alamos National Laboratory** and **Sandia National Laboratories** designed the original W76-0 warhead, and are the design agencies for the refurbished W76-1 warhead. The W76-1 Life Extension Program also requires the capabilities of scientists, engineers, technicians, and support personnel from the **Pantex Plant, Y-12 National Security Complex, Savannah River Site,** and **Kansas City National Security Campus.**

Major Accomplishments

The W76-1 Life Extension Program's first production unit was achieved in September 2008, and the first delivery of warheads to the Navy for deployment was completed in FY 2009. As of November 2016, the program completed over three-quarters of the total number of refurbished warheads scheduled for delivery to the Navy, and is on track to complete production in 2019.



A researcher at Sandia National Laboratory slides a tray of W76 neutron generator tubes into a desiccator cabinet at the Explosive Components Facility as part of the W76-1 recertification program.

Trident D5 Missile test flight launch.

Major Milestones

- Achieve or exceed annual refurbishment warhead production rates at the Pantex Plant.
- Deliver refurbished warheads on schedule to the Navy.
- Produce and deliver joint test assemblies for surveillance flight test.
- Execute retrofit evaluation system test and stockpile surveillance activities to facilitate completion of Annual Assessment and Weapon Reliability activities.